Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

Eighth Grade

Nott William Flint

Geography

The subject for the year is a review of the geography of the world through RIVERS. So far the children have been studying the birth and development of a typical river, using specific streams only as illustrations of particular points under discussion. From this time on they will take up specific rivers, and study each in some detail. The rivers to be discussed each month will be grouped in such a way as to illustrate some one feature of river history. During one month, for example, only tidal rivers will be treated; during another, delta rivers; during a third, rivers which have built their banks above the surrounding country, and so on. For December the group will consist of the most important delta rivers of Eurasia.

I. The Hoang-ho and Yang-tse-Kiang.

1. The Chinese delta plains. (a) Their extent. (b) Their fertility. (c) Kinds of crops. (d) Density of their population. (e) Floods. (f) Safety measures against floods.

2. Navigation on Chinese rivers. (a) Its importance in a country practically without railroads. (b) Kinds of craft. (c) Goods transported. (d) Scenery. (e) River life.

3. The great fertility and protected situation of the Chinese river plains as furnishing an ideal "nest-place" for a race.

II. The Brahmaputra and Ganges.

1. Their sources beyond the Himalayas. (a) They bring the drainage of the northern as well as of the southern slopes of the Himalayas into India. What does this tell us of the topography of the country?

2. Area of the combined deltas, 50,000 square miles. Depth, as tested by borings, 481 feet.

3. Richness of the soil.

4. Crops. (a) Kinds. (b) Number per year.

5. Density of population.

6. Scenery.

7. The Ganges as a sacred river. (a) Pilgrimages to Allahabad. (b) Sacred cities.

8. These plains as the cradle of the Hindu race.

III. The Danube.

1. Delta begins 45 miles from Black Sea and has area of 1,000 square miles; uncultivated.

2. Basin 300,000 square miles; 400 tributaries, of which 100 are navigable.

3. Upper courses frozen all winter. Danger from this source. Increased erosive power on this account.

4. Improvement of channel under international commission. Results. Expense met by river taxes.

5. Vienna.

IV. The Rhine.

1. Formed by drainage of 150 Swiss glaciers. Steep gradient in upper courses.

2. Purified in Lake of Constance.

3. Falls at Schaffhausen.

4. The picturesque Rhine, from Bergen to Siebengebirge. Narrow, rocky valley. Lateral ravines. Ruined castles. Vineyards.

5. Low banks in Holland. Embankments.

6. Character of lower course now compared with description in Roman records as an estimate of amount of work done.

7. One of chief waterways of Europe from earliest times. (a) Favorable Situation: Flows through populous and varied regions. Empties into much-frequented sea opposite England. Connected by Rhine-Rhône and Rhine-Marne canals with South of France and with basin of Danube by Ludwig's Canal.

8. Total weight of goods forwarded yearly, 1,000,000 tons; timber, coal, iron, agricultural produce, manufactured goods.

9. Timber rafts; floating villages.

10. Cities: Spires, Mainz, Coblentz, Bonn, Cologne, Düsseldorf.

11. Importance of Rhine in German thought and literature: Legends, ballads, Niebelungenlied.

12. Victor Hugo's dictum:

"Le Rhin réunit tout. Le Rhin est rapide comme le Rhône, large comme la Loire, encaissé comme la Meuse, tortueux comme la Seine, limpide et vert comme la Somme, historique comme le Tibre, royal comme le Danube, mystérieux comme le Nil, pailleté d'or comme un fleuve d'Amérique, couvert de fables et de fantômes comme un fleuve d'Asie."

References: Wells Williams, *The Middle Kingdom ;* Hunter, *The Indian Empire ;* Marshman, *History of India;* Encyclopædia Britannica, under *Rhine* and *Danube.*

Mathematics

The number work for the month will be correlated with the study of ventilation, history, and geography. In the subject of ventilation there will be as much applied mathematics as the class can handle.

In estimating the cubic volume of air in the various rooms the pupils will be required to make precise measurements, so that great care on their part will be necessary in estimating the corrections to be made for inequalities and projections of the wall, and for solid bodies. The students of the Seventh and Eighth Grades will not be too young to find the height of rooms and of buildings by triangulation, or by the use of the quadrant. To do this the class will need to work out at least one proposition in geometry: that the sides of similar triangles are in proportion.

In history there will be the comparison of the areas and populations of European countries.

In geography comparisons of the lengths of various rivers in Eurasia; comparisons of actual to direct lengths of rivers; computations of the size of river-basins, and of the carrying or erosive power of rivers. For instance, such examples as the following will be a great reinforcement to the study of geography:

The annual discharge of solids in solution by the Rhine is 92.3 tons per square mile of river. What is the total discharge per year?

How long will it take for the Rhine to wear its basin down one inch? etc.

From the history of Ostia, Ravenna, and Adria calculate how long it would take to build land into the sea a distance of one mile; of fifty miles.

Nature Study

For December and January—the cold months—the subject will be the warming and ventilation of houses. Beginning with its particular room, the class will proceed to study the fresh-air supply of the whole school, and will then visit some convenient public building to see a ventilating system in operation. Each student will also make a special report to the class on the means for ventilating his sleeping-room and the house he lives in. Before this subject is dropped, each pupil will present a drawing, accompanied by full explanations, embodying his idea of a system of ventilation for the new building of the Chicago Institute.

I. (a) The class might well begin this study by reading the cunning methods bees use to ventilate their hives in warm weather (see Encyclopædia Britannica, or Huber, on *Bees*). (b) Constituents of normal air: N 79%, O 20.96%, CO_2 .04%. Very pure air: O 20.99%, CO_2 .03%. Air beginning to be bad: O 20.60%. Air in which candles will not burn: O 18.27%. (c) Show the value of oxygen to animals, and of carbondioxide to vegetables.

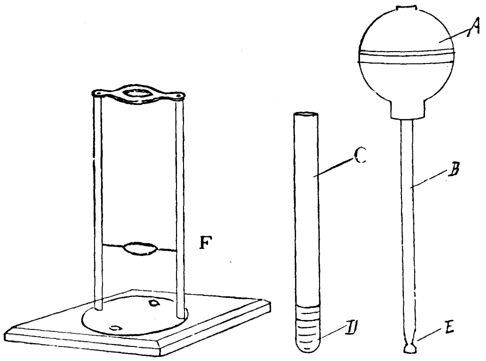
II. The breathing capacity of each child in the room will be tested and the average capacity for the room found. The pupils can then calculate precisely how much air should be brought into the room for their needs. Then, when they have discovered the absolute and imperative requirement of human beings for fresh air, they may study what possible variations in the proportions of the air constituents can be safely allowed, and how much air should be provided per hour for each person—1000–3000 cubic feet. The class will then be ready to experiment on air to find out the amount of CO_2 in a given volume.

For this experiment the best and simplest instrument is Wolfert's air-tester, which can be bought, or, preferably, made in any physics laboratory. The instrument will be easily understood from the accompanying diagram. A is a simple rubber bulb with a capacity of 28 cubic centimeters; B, a glass outlet tube with a constriction (E) near the open end; C, a glass test-tube 12 centimeters in length and 12 millimeters in diameter, with a horizontal mark near the bottom; the mark shows the height to which it must be filled with 3 cubic centimeters of perfectly clear lime-water. Upon the whitened bottom of the tube is stamped a black mark. A small standard (F), a swab, a vial of vinegar for cleaning the tube, and a bottle of clear lime-water completes the instrument.

To perform the experiment the test-tube should be filled with lime-water (a saturated solution) up to the horizontal mark. Then fill the rubber bulb with the air to be tested, insert the small tube nearly to the bottom of the lime-water, and expel the air as rapidly as may be without causing the bubbles to overflow from the test-tube, always taking care, however, to continue the pressure on the bulb until the small tube is removed from the lime-water. Repeat this process until the black mark is quite obscured by the opacity produced by the reaction of the carbonic acid upon the lime-water. The observer's point of view must be from above the mouth of the test-tube.

After each observation the tube should be washed out and wiped dry. Should a white incrustation form on the sides of the tube it can be removed with a swabbing of vinegar. The experiment should be performed by daylight, with the tube held over some white background, as a sheet of writing-paper; and care should be taken lest the result be made valueless by the experimenter's breath.

If the air be very foul, it will be necessary to examine the mark after filling and discharging the bulb a few times only, but if the air be good, twenty-five or more fillings can be expelled before an examination is necessary.



Should the mark become obscured after expiring the bulb ten or fifteen times only, that air is unfit for continuous respiration. In a sick-chamber the air should be so pure that the mark will not become invisible under the turbidity in less than thirty to forty expirations.

The following table (compiled by Professor Wolfert) will show the amount of carbonic acid in the tested air. The table reads down, *i. e.*, if one filling of air makes the lime-water turbid there would be 200 volumes of CO_2 in 10,000 volumes of air:

Number of Fillings.	Carbonic Acid per 10 M.	Number of Fillings.	Carbonic Acid per 10 M.	Number of Fillings.	Carbonic Acid per 10 M.	Number of Fillings.	Carbonic Acid per 10 M.
1	200	16	12.5	31	6.4	46	4.3
2	100	17	12	32	6.3	47	4.2
3	67	18	11	33	6.1	48	4.1
4	50	19	10.5	34	5.9	49	4.1
5	40	20	10	35	5.7	50	4
6	33	21	9.5	36	5.5	51	3.9
7	29	22	9.1	37	5.4	52	3.9
8	25	23	8.7	38	5.3	53	3.8
9	22	24	8.3	39	5.1	54	3.7
10	20	25	8	40	5	55	3.7
11	18	26	7.7	41	4.9	56	3.6
12	16	27	7.4	42	4.8	57	3.5
13	15	28	7.1	43	4.6	58	3.5
14	14	29	6.9	44	4.5	59	3.4
15	13	30	6.6	45	4.4	60	3.3

NOTE.—If Wolfert's air-tester cannot be bought or made, the experiment can be performed by using ordinary bottles—a 16-oz., 12-oz., 10-oz., 8-oz., 6-oz., 4-oz. sizes—and pouring into each half an ounce of saturated solution of lime-water. Then, after filling the remainder of space with air to be tested, cork and shake the bottles, and put them by. If, after standing, each bottle should show a turbidity in its lime-water, there would be in the air of the 12-oz. bottle less than .04% of CO_2; in the 10-oz. more than .05%; in the 8-oz. more than .06%; in the 6-oz. .08%; and in the 4-oz. more than .1%.

Oral Reading: *Horatius at the Bridge*, continued; Cicero, *First Oration against Catiline; Julius Cæsar;* Bulwer, Flight of Nydia (*Last Days of Pompeii*); F. H. Burnett, *Giovanni.* Training in hearing and producing English vowel sounds. (See Bell's vowel table in outline for Oral Reading.)

Manual Training: See the November outline. The chalk-modeling of river valleys, and basins will go on with a view to modeling Eurasia at the end of the study. The children will paint typical winter landscapes in connection with their meteorological observations.

Music: *Christmas Bells,* Niels Gade, text by Hans Christian Andersen, December COURSE OF STUDY; *Christmas Bells,* text by Longfellow, Modern Music Series, Second Book, Eleanor Smith; *Ye Shepherds, Arise,* Reinecke, 50 Children's Songs; *St. Christopher,* Mrs. Crosby Adams, December COURSE OF STUDY; *Old Christmas,* Modern Music Series, Second Book, Eleanor Smith; *Winter Song,* Modern Music Series, First Book, Eleanor Smith; *The Christmas Tree,* Edward Grieg (Augener & Co. edition).

Latin: (Katharine M. Stillwell.) On opening school it was found that few of the Sixth and Seventh Grade pupils had studied either French or German. So it was thought best for this year to teach Latin in the Eighth Grade only.

The series of lessons as planned for beginners has been used in this grade, and the work will be continued according to the following outline:

Reading Lesson

1. Aliæ mēnsæ sunt marmoreæ, sed aliæ sunt citreæ.
2. Sellæ nōn multæ sunt.
3. Tua sella nōn est cathedra.
4. Mea sella est dūra.
5. Puella est in cathedrā.

Vocabulary

NOUN.
cathedra — easy chair.

ADJECTIVE.
dūra — hard.

Points to be Made

1. General review.
2. Write the conjugation; third, present indicative.

Reading Lesson

1. Puella ad scholam it.
2. Puella ā villā ad scholam it.
3. Schola est in pergulā.
4. Schola prīmā hōrā incipit.
5. Puella semper cum servā it.
6. Servæ capsās puellīs ad scholam ferunt.
7. Sellæ sunt in scholā.
8. Puellæ in sellīs sunt.
9. In tabellīs scrībunt.
10. Tabellæ sunt cēreæ.
11. Prīmā hōrā tabellæ puellārum sunt vacuæ.
12. Quintā hōrā sunt plēnæ litterārum.
13. In scholā puellæ litterās discunt et scrībunt.
14. Græcam linguam discunt.
15. Arithmēticam discunt.
16. Litterās et Græcās et Rōmānās discunt.

Vocabulary

NOUNS.
schola—school.
pergula—shop
hōra—hour.
capsa—satchel.
tabella—tablet.
lĭngua—language.
arithmētica—arithmetic
litteræ—literature

VERBS.
eō—go.
incipiō—begin.
ferō—carry.
scrībō—write.
discō—learn.

PREPOSITIONS.
cum—with.
ad—to.
in—in.
ā or āb—from.

ADVERBS.
semper—always.
sæpe—often.
nunc—now.

ADJECTIVES.
prima—first.
cērea—waxen.
vacua—empty.
plēna—full.
Græca—Greek.
Rōmāna—Roman.
quinta—fifth.
sōla—alone.

Points to Be Made

1. Ablative.
(a) Separation.
(b) Sociative.
c. Time when.
2. Ad—with the accusative (place to which).

Questions to be Answered in Latin

1. Does the Roman girl go to school alone?
2. Who is with her?
3. What does the servant do for her?
4. When does she go to school?
5. What is on her tablet?
6. Where is the tablet?
7. Do Roman girls ever learn the Greek language first?
8. What literature do they read?

Reading

1. Mātrōna Rōmāna tunicam gerit.
2. Stolam et pallam gerit.
3. Stola est longa et albra.
4. Mātrōnæ Rōmānæ umbellās ferūnt.
5. Tunica mātrōnæ est lānea.
6. Serva lānam dēducit.
7. Mātrōnæ texit.

Vocabulary

Nouns.
mātrōna—matron.
stola—stole.
umbella—umbrella.
lāna—wool.

Adjectives.
lānea—woolen.

Verbs.
dēducō—spin.
texō—weave.

Adverbs.
ubi—where.
ibi—there.

Points to be Made

1. Genitive.
2. Dative. (Indirect object.)

Questions to be Answered in Latin

1. What does the Roman matron wear?
2. Describe the tunic.
3. Describe the stole.
4. Who spins the wool for the matron?
5. Where do they spin?

Reading

1. Plērumque stola mātrōnæ est lānā albā.

2. Cum mātrōna Rōmāna tunicam cōnexuit tum stolam induit.

3. Tum plērumque zōnā laneā cingit.

4. Dominæ līneās tunicās nōn plērumque gerunt, sed sæpe ancillæ gerunt.

5. Ancillæ lānam texunt, sed numquam sine dominā.

Vocabulary

Nouns
zōna—girdle.
domina—mistress.
ancilla—maid-servant.

Preposition with Ablative.
sine—without.

Conjunction.
cum—when.

Verbs.
cingō—bind.
induō—put on.

Adverbs.
tum—then.
numquam—never.
plērumque—generally.

Adjective.
līnea—linen.

Points to be Made

1. Assumptive sentences.
2. Ablative means.
3. Perfect tense.

Writing Lesson

Class will write about the school, using the first person.

Review Grammar

Declension of nouns and adjectives.

Reading

1. Puer Rōmānus bullam gerēbat.

2. Togam prætextam gerēbat.

3. Clāvus lātus et purpureus togam prætextam dīstinguēbat.

4. Cum puerī septem annōs nātī erant, ad scholam grammaticam ībant.

5. Puer erat numquam sine pædagōgō, Græcō servō, quī Græcā linguā eum īnstituēbat.

Vocabulary

Nouns.
toga prætexta — dress of youth.
clāvus — band.
puer — boy.
pædagōgus — tutor.
servus — slave.

Pronoun.
eum.

Verbs.
dīstinguō — distinguish.
īnstituō — educate.

Adjectives.
lātus — broad.
grammaticus — grammar.

Points to be Made

1. Nouns; second, declension, masculine.
2. Imperfect tense.
3. Septem annōs nātī — idiom.
4. Pronouns.

Questions to be Answered in Latin

1. What did the Roman boy wear?
2. When did he attend the grammar school?
3. What did he learn there?
4. Who taught him the Greek language?

Reading

1. Ubi schola fuit? (Answer in Latin.)
2. Nōnne schola incēpit hōrā prīmā?
3. Sellæ erant in scholā.
4. Puerī in sellīs erant ante magistrum.
5. Quid in scholā puerī Rōmānī discēbant?
6. In scholā discēbant legere et scrībere.
7. Scrībēbant in tabellīs stilō, sī charta nōn fuit.
8. Græcam linguam discēbant.
9. Perdiscēbant opera Naevii et Ennii, prīmōrum poētārum Latinōrum.
10. Arithmēticam discēbant.
11. Charta nōn erat, ergō tabula erat cuīque puerō.
12. Tabulīs pictīs in mūrīs scholæ fābulās discēbant.
13. Ferula quoque erat in scholā.

Vocabulary

Nouns.
magister—master (school).
stilus—writing instrument.
charta—paper.
opus—work.
poēta—poet.
ferula—rod.
fābula—story.
mūrus—wall.
tabula picta—painting.
Adjective.
Latīnus—Latin.

Verb.
legere—to read.
Preposition.
ante—in front of.
Conjunctions.
sī—if.
ergō—therefore.
Pronoun.
quisque.
Interrogative Particles.
Quid—what.
Nōnne.

Points to Be Made

1. Question with nōnne.
2. Conditional, sī.

Reading

1. Schola Rōmāna bona fuit, sed magister sevērus fuit.
2. Sevērus quidem fuit, sed iūstus et bonus.
3. Impiger is fuit.
4. Discipulus cum malus est, schola quoque mala est.
5. Vīsne scholam tuam esse bonam?
6. Puer quī nōn attentus est, numquam parātus est.
7. Tūne semper attentus es?
8. Cum scholæ hōra est, opus fac; cum lūdī hōra est lūdō tē dā.
9. Sīc semper lætus eris.

Vocabulary

Nouns.
discipulus—pupil.
lūdus —play.
Adverbs.
quidem—indeed.
sīc—thus, in that way.
Adjectives.
sevērus—stern, severe.
iustus—just.
attentus—attentive.

parātus—prepared.
lætus—happy.
impiger—energetic.
Verbs.
volō (vis)—wish.
faciō (fac)—do.
dō (dā)—give.
esse—to be.
Pronoun.
tū—second person.

Writing Lessons

Write a comparison between a Roman and an American school.

Write paradigms.

First declension nouns.

Second declension nouns, masculine.

Verbs, third conjugation, indicative mode, present, imperfect, future and perfect tenses.

Write the declension of adjectives to agree with nouns.

French Christmas Song